# PART I – SECTION C
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## C.1 SCOPE OF CONTRACT

The Contractor must provide all program management, engineering, production, and testing to integrate, and deliver Medium Intensity Approach Lighting Systems with Runway Alignment Indicator Lights (MALSR) systems as outlined in this SOW.

## C.2 DOCUMENTS

**FAA Documents**

| | |
|---|---|
| FAA-E-2325e | Specification, Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) 5/22/00 |
| 6292-0 | FA-11500 Title/Index Sheet, Revision |
| 6292-1 | FA-11500 MALSR with RMS Plan and Profile View of MALSR |
| 6292-2 | FA-11500 MALSR with RMS Electrical Details #1 |
| 6292-3 | FA-11500 MALSR with RMS Electrical Details #2 |
| 6292-4 | FA-11500 MALSR with RMS Electrical Details #3 |
| 6292-5 | FA-11500 MALSR with RMS Power and Control Station Equipment Exterior Mounting Details |
| 1832-1 | Recommended Layout for PIU |
| 1832-2 | Connection Details for PIU |
| 1832-3 | PIU Wiring Diagram |
| 1832-4 | Manufacturer's Instructions for TB2 assembly |
| TI 6850.97A | Instruction Book, MALSR, FA-17900 (NSN 0056-00-480-0542) |
| TI 6850.102 | Instruction Book, New Bedford Panoramex (NBP) Solid State Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Control Cabinet |
| SSM-MALSRI-001 | System Support Directive, Replace control Cabinet Type FA-17900 with FA-21000 PCA (optional) and release revision TI 6850.97A |

**OTHER DOCUMENTATION**

| | |
|---|---|
| Y1-02-1062 | DME Corporation Production Acceptance Test (PAT) Procedure for the MALSR w/o RMS, Revision A, 5/12/03 |

**NON-GOVERNMENT DOCUMENTS**

**American National Standards Institute**

| | |
|---|---|
| ANSI/ASQ/ISO-Q9001-2008 | Quality Management Systems – Requirements |

**COPIES OF DOCUMENTS**

Copies of FAA specifications and interface documents may be obtained from the Federal Aviation Administration, Headquarters Public Inquiry Center: APA-200, 800 Independence Avenue SW, Washington, DC 20591, 202-267-3484. Requests should fully identify material desired and cite the solicitation or contract number.

Requests for copies of documents not covered in the preceding paragraph should be emailed to the Contracting Officer. Requests should fully identify the material desired and cite the solicitation or contract number.

Copies of ANSI/ASQ/ISO-Q9001-2008 can be obtained from the following source: American Society for Quality, 611 East Wisconsin Avenue, P.O. Box 3005, Milwaukee, Wisconsin 53201-

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3005. Phones: (414) 272-8575 or (800) 248-1946. Fax: (414) 272-1734. (http://www.asq.org/)

## C.3 REQUIREMENTS

The Contractor must perform the work described in this Statement of Work (SOW). The work described herein must be fully integrated to ensure efficient and timely execution. The Contractor must provide engineering, kitting, test, and technical service to integrate and deliver Medium Intensity Approach Lighting Systems with Runway Alignment Indicator Lights (MALSR) Systems as required by this SOW. The data to be delivered by the Contractor prescribed by this SOW are specified in the Contract Data Requirements List (CDRL) included in Section J.

### C.3.1 EQUIPMENT REQUIREMENTS

One (1) MALSR system must consist of the following items listed below:

| Quantity | Description | Type Number |
|---|---|---|
| 1 | Power Control Assembly (PCA) Modification Kit that includes the MALSR Control Cabinet, the Control Cabinet Site Spares, the Power Isolation Unit (PIU), the Installation kit, and two copies of TIB 6850.102. (TIB will be provided as GFI) | FA-21000 |
| 5 | Individual Control Cabinets (ICC) | FA-11502 |
| 5 | Flasher Light Unit | FA-11503 |
| 1 | Power Transformer | FA-11504 |
| 1 | Flasher Tester | FA-11505 |
| 45 | PAR-38 Lampholder | FA-11506 |
| 18 | PAR-56 Lampholder | FA-11508 |
| 5 | Junction Box | FA-11509 |
| 50 | PAR-38 Lamps | 60PAR/SP/HIR/130V or 150PAR/SP/CVG |
| 20 | PAR-56 Lamp (120V, 300W) | 300PAR56/NSP-120V |
| 1 | Trigger sense PWA site spare (P/N: G1-23-1251) | |
| 2 | Technical Instruction Book (will be provided as GFI) | TI 6850.97A |
| 1 | Production Acceptance Test Report | |

#### C.3.1.1 Integration and Testing Unit

The first MALSR system must be used to set up the lamp load, set up the production line, and to validate the integration and testing activities. This system must undergo the production tests in accordance with Section C.3.9. This system will be delivered as a production system at the end of the contract.

### C.3.2 ASTRONICS/DME CORPORATION PURCHASED ITEM(s)

The Contractor must purchase the item(s) listed in the table below from Astronics/DME Corporation, 6830 N.W. 16th Terrace, Fort Lauderdale, FL 33309 (954-975-2100).

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| FAA Type # | Description |
|---|---|
| FA-11502 | Individual Control Cabinet |
| FA-11503 | Flasher Light Unit |
| FA-11504 | Power Transformer |
| FA-11505 | Flasher Tester |
| FA-11506 | PAR-38 Lampholder |
| FA-11508 | PAR-56 Lampholder |
| FA-11509 | Junction Box |
| | Triggers Sense PWA site spare (P/N: G1-23-1251) |

The quantity of each item must be determined by the number of MALSR systems required in Section B.

### C.3.3 NBP CORPORATION PURCHASED ITEM(S)

The Contactor must purchase the item(s) listed in the table below from New Bedford Panoramex Corporation, 1037 West Ninth Street, Upland, California 91786 (909-982-9806).

| Part Number | Description |
|---|---|
| 93001119 | MALSR Power Control Assembly |

The quantity of each item must be determined by the number of MALSR systems required in Section B.

### C.3.4 ANCILLARY ITEMS

The Contractor must purchase one set of the following item(s) to develop the lamp load for testing purposes only. The Contractor must deliver one set of each item (45 PAR-38 lamps and 18 PAR-56 lamps) with each system delivered in section B.

| Quantity | Nomenclature | FAA Number |
|---|---|---|
| 45 | PAR-38 Lamp | 60PAR/SP/HIR/130V or 150PAR/SP/CVG |
| 18 | PAR-56 Lamp 120V, 300W | 300PAR56/NSP-120V |

The Contractor must purchase other items to develop a lamp load for testing.

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### C.3.5 GOVERNMENT FURNISHED INFORMATION (GFI)

The Government will provide the Contractor with the GFI listed in Section J-2 of this contract.

### C.3.6 POWER ISOLATION UNIT (PIU)

The Contractor must manufacture a Power Isolation Unit (PIU) IAW the Government Furnished Drawings and System Support Modification (SSM). The PIU shall be integrated IAW the SSM. The Contractor must maintain configuration control of this item IAW with section C.3.11.

### C.3.7 INTEGRATION

After receipt of the required components for a MALSR system and the manufacturing of the PIU, the Contractor must integrate the MALSR system components using the GFI as referenced. The Contractor must build the necessary cables, and/or wiring harnesses for interconnection of all MALSR system components for the production test.

### C.3.8 PROGRAM MANAGEMENT

The Contractor must maintain a formal organization to manage the contract and subcontracts, including, at a minimum: a Program Manager, program control, quality assurance, configuration management, risk management, and security. The management organization, techniques, tasks, and procedures must be documented in an approved Program Management Plan (PMP). The Contractor must provide the PMP in accordance with CDRL A001. The PMP will serve as the baseline for describing the Contractor's work plan. The PMP must describe the management of the work outlined in this Contract.

CDRL A001 Program Management Plan

#### C.3.8.1 Integrated Master Schedule (IMS)

The Contractor will establish an IMS based on a logical and efficient sequence of events designed to accomplish the work described in this SOW and discussed at formal meetings. Any schedule adjustments will be explained with a mitigation plan to resume the original schedule.

CDRL A005 Integrated Master Schedule

#### C.3.8.2 Risk Management

The Contractor must identify program technical and schedule risks and report the status of these risks to the Government in monthly Program Status Reports (PSR). The Contractor must evaluate program schedule risks and formulate plans and a risk management schedule for the elimination or reduction of such risks. The risk management schedule, mitigation, and contingency plans will be reviewed and discussed at the Program Overview Meeting (POM).

#### C.3.8.3 Program Status Reports (PSR)

The Contractor must prepare and submit monthly PSRs. In addition to CDRL A002 the report must include, at a minimum, an assessment of Contractual efforts as of the date of the report, areas of risk, a schedule, and proposed approach(es) for correcting problems. The Contract must also include a list of tasks in progress during the month and an estimate of percent completion, a list of tasks completed this month, and a list of items scheduled for production, test, delivery, and any other program milestones in the next three months. The PSR must

also include contract financial information of accounts received and paid. The PSR must also include Configuration Status of the received hardware and completed MALSR systems (see paragraph C.3.12, Production Units).

CDRL A002 Program Status Report

#### C.3.8.4 Meetings, Conferences and Reviews

The Contractor must conduct meetings, conferences and reviews in accordance with this statement of work. The Contractor must prepare and submit agendas and minutes. In addition to CDRL A003 and CDRL A004, when meetings or conferences are held at the Contractor's site, the Contractor must provide facilities and office equipment (e.g., access to telephone and fax), internet access, sub-Contractor personnel when requested, and appropriate presentation materials, mockups, and technical data. Copies of presentation materials must be prepared for all meeting participants.

##### C.3.8.4.1 Post Award Conference

A Post Award Conference will be held at the Contractor's facility within approximately thirty (30) days after Contract award.

CDRL A003 Meeting Agenda
CDRL A004 Meeting Minutes

##### C.3.8.4.2 Program Overview Meetings (POM) /Technical Interchange Meetings (TIM)

The Contractor must conduct one (1) POM as required by the Government and no more than one (1) TIM as deemed necessary by the Government.

The POM must be conducted after the following activities are completed; receipt of all material for MALSR systems for CLINs 001 and 006, Section C.3.1.1 and Section C.3.7. The content of the POM must include a detailed contract status, identify outstanding action items, review potential and actual technical, programmatic areas, and provide a forum for highlighting all the activities planned for the next period. Hard copies of these presentations will be made available at the meetings for all participants. Areas normally covered at these meetings may include, but are not limited to:

- Risk and problem identification, ranking, avoidance, reduction, and control,
- Establishment of schedules, to include critical path identification and performance baseline,
- Progress tracking and reporting of milestones,
- Definition and implementation of contingency planning,
- Subcontractor management to include technical effort status and the identification of potential problem areas,
- Logistic support status,
- Manufacturing status,
- Production problems/Status (Resolved/Unresolved),
- Identification of parts obsolescence.
- Inventory of parts.

The Contractor must prepare and submit for Government review, a meeting agenda at least 10 (ten) calendar days prior to the meeting. The Government may, as a result of this review, direct the Contractor to add additional items to the agenda. The Contractor must incorporate these additional items and acknowledge them by telephone to the Contracting Officer. The

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Contractor must prepare and submit to the Contracting Officer, minutes of each meeting within 10 (ten) calendar days of the meeting end. The minutes are to include a narrative summation of the meeting, a summary of action items assigned, a list of attendees, and a schedule of planned activities.

The Government may request changes to the minutes. Changes will be agreed upon by both parties prior to incorporation in a resubmission of the minutes.

CDRL A003 Meeting Agenda
CDRL A004 Meeting Minutes

### C.3.9 TEST AND EVALUATION

The Contractor must ensure all test planning, compliance with test procedures, testing, data collection, analysis, and all required test documentation is produced and complies with terms and conditions of this contract. The Contractor must assign a Test Manager (TM) to supervise, control and coordinate all Contractors testing.

The Contractor must conduct the tests in the following subparagraphs in accordance with procedures supplied under this contract. The Contractor must use internal quality control procedures for the conduct of all tests. The Contractor must provide test results to the FAA's Quality Reliability Officer (QRO) or other witness as designated by the Contracting Officer. The test results will be packaged with each MALSR system.

#### C.3.9.1 Production Acceptance Test (PAT)

After the MALSR is determined to be working properly, the Contractor must conduct Production Acceptance Testing (PAT) using GFI procedures modified under this contract. The test procedures must be in contractor format and incorporate modifications as necessary due to the Contractor's facilities and equipment. This contractor modified PAT procedures will be approved by the FAA prior to conducting the PAT. A production test must be conducted on the first delivery (CLIN 1) and all subsequent MALSR systems C.3.12 using a tungsten lamp load equivalent to the MALSR lighting field. The Contractor must complete the test data sheets during testing and submit them to the Government for Government review and approval.

Unless otherwise specified, all tests must be performed at room temperature (25°C ±10°C). The Government may elect to witness these tests. The Contractor will notify the Contracting Officer at least fourteen (14) calendar days in advance of each of these tests.

CDRL D001 Production Acceptance Test Procedures and Test Data Sheets

##### C.3.9.1.1 Test Reports

After the PAT on CLINs 1 and 6, the Contractor must prepare a test report (CDRL D003). If the options are exercised, the Contractor must prepare a Test Report (CDRL D003) for each MALSR system. The report will include all procedures, results, pictures, test setups including identification of time, date, and personnel involved in the testing.

CDRL D003 Test Reports

### C.3.10 QUALITY ASSURANCE

The Contractor must establish and maintain a documented quality system compliant with the requirements of ANSI/ISO/ASQ Q9001-2008, "Quality Management Systems – Requirements."

The Contractor must submit a Quality System Plan (QSP) IAW ANSI/ISO/ASQ- Q9001-2008, CDRL F001 describing the Contractor's quality system and its applicability to the Contract to

assure the delivery of products and services in conformance with all contractual requirements. The QSP must assure, as a minimum, that the following items and guidelines are included in the Program:

(a) Sufficient, independent responsibility and authority are granted to assigned personnel so that quality problems can be identified, evaluated, and reported, and that solutions can be recommended, all without fear of reprisal, intervention, or adverse action
(b) Adequate CM is performed throughout the lifecycle
(c) All tests and inspections are performed in compliance with Contract requirements and all test data are complete, correct, traceable, repeatable, and acceptable.

The Contractor must require from first tier suppliers a quality system achieving quality control of the services and supplies provided. The Contractor must report its quality metrics during the POM and in the PSR (CDRL A002).

CDRL F001 Quality System Plan (QSP)

### C.3.11 CONFIGURATION MANAGEMENT (CM)

The Contractor must establish, implement, and maintain a CM program in accordance with the requirements of this contract. The Contractor must specify a single authority that will serve as a focal point for all CM related issues. CM personnel must support all meetings and reviews.

#### C.3.11.1 Configuration Management Plan (CMP)

The Contractor must submit a Configuration Management Plan (CMP) which describes the Contractor's Configuration Management Program, including responsibilities, methodology and procedures for baseline identification (serialization), and configuration control of purchased hardware. The CMP must detail the Contractor's internal interface responsibilities and Contractor interface with FAA Project Management, Technical Systems Engineering, Quality Assurance and Test and Evaluation.

CDRL E001 Configuration Management Plan

### C.3.12 PRODUCTION UNITS

The Government may place an order to manufacture, test, package, and ship MALSR Production Units. The units will be integrated and tested in accordance with the requirements of this SOW. The packing, packaging, and shipping requirements must be in accordance with Section D of this contract. Anomalies during production will be addressed per the quality assurance plan (CDRL F001).

**End of Section C**